LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Re-entered 7/10/03

1. (Currently Amended) A method for surface processing by plasma polymerization of a surface of a metal by using a DC discharge plasma, comprising the steps of:

(a) ~~positioning an anode electrode which is substantially of metal to be surface-processed and a cathode electrode in a chamber;~~ utilizing a plasma polymerization chamber which is outfitted with an electrode that is connected to a negative terminal of a DC power supply and positioning within the chamber a metal substrate to be surface-modified and directly and electrically connecting the metal substrate to a positive terminal of a DC power supply;

(b) maintaining a pressure in the chamber at a predetermined vacuum level;

(c) blowing an unsaturated aliphatic hydrocarbon monomer gas or a fluorine-containing monomer gas at a predetermined pressure and a non-polymerizable gas at a predetermined pressure into the chamber; and

(d) applying a voltage to the electrodes in order to obtain a DC plasma consisting of positive and negative ions and radicals generated from the unsaturated aliphatic hydrocarbon monomer gas or the fluorine containing monomer gas and the non-polymerizable gas, and then forming a polymer with hydrophilicity or hydrophobicity on a surface of the anode electrode by plasma deposition.

2. - 19. (Withdrawn)

20. (Currently Amended) A material having a polymer with excellent hydrophilicity or hydrophobicity ~~is~~ fabricated by the method of claim 1.

21. (Original) The material according to claim 20, wherein the material surface has a polymer which exhibits an excellent affinity for paint.

22. (Withdrawn)

23. (Previously Amended) The method for surface processing by plasma polymerization according to claim 1, wherein the DC discharge is performed periodically in the form of on/off pulsing during a total processing time.

24. (Previously Amended) The method for surface processing by plasma polymerization according to claim 1, wherein the polymer obtained in the step (d) is surface-processed by a plasma of at least one non-polymerizable gas selected from the group consisting of O_2, N_2, CO_2, CO, H_2O and NH_3 gas in order to improve the hydrophilicity of the polymer.

C1 cont'd

25. (Previously Added) The method for surface processing by plasma polymerization according to claim 1, wherein in the step (d), the polymerization process by the plasma is performed for 1sec-2min.

26. (Previously Amended) The method for surface processing by plasma polymerization according to claim 1, wherein the ratio of the unsaturated aliphatic hydrocarbon monomer gas and the non-polymerizable gas is varied to vary the properties of the polymer.

27. (Canceled)

28. (Previously Added) The method for surface processing by plasma polymerization according to claim 1, wherein the non-polymerizable gas is 0-90% of the whole gas mixture.

29. (Previously Added) The method for surface processing by plasma polymerization according to claim 1, wherein the polymer is annealed at a temperature of 100 - 400°C in the ambient atmosphere for 1 - 60min.

30. - 32. (Withdrawn)